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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/699,091	10/31/2003	Cheng-Hsuan Chen	Chen 5-17	2681

7590 09/12/2005

Docket Administrator
Lucent Technologies Inc.
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EXAMINER	
ZIMMER, MARC S	

ART UNIT	PAPER NUMBER
1712	

DATE MAILED: 09/12/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/699,091	CHEN ET AL.	
	Examiner	Art Unit	
	Marc S. Zimmer	1712	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *11 July 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *10-14* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *10-12* is/are rejected.

7)☒ Claim(s) *13-14* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

Claim Status Identifier

The status of claim 10 has been mislabeled as an amended claim despite the fact that there have been no changes. Should Applicant decide not to amend claim 10 in their response to this action, the status identifier should be changed back to "original".

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

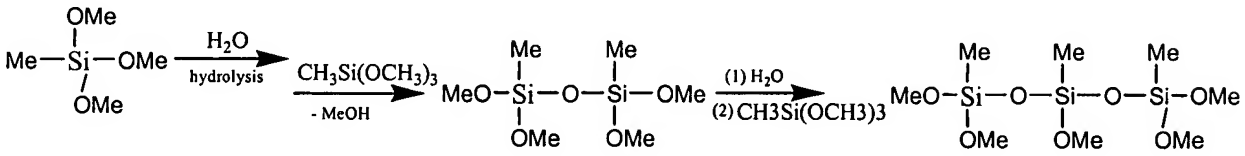
> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 10-12 are rejected under 35 U.S.C. 102(e) as being anticipated by Pinnavaia et al., U.S. patent # 6,465,387 for the reasons outlined in the correspondence dated April 4, 2005.

It is Applicant's position that the condensation product suggested by *Pinnavaia* is not amphiphilic insofar as the curing/crosslinking of the mesoporous organosilicon oxide-forming materials disclosed therein can "change the hydrophilic nature of moieties on the precursors". Although Applicant's arguments are not exactly clear, their comments are consistent with remarks made in the "SUMMARY" section of the Specification whereby products derived from precursors bearing hydrophilic groups are said to be far less hydrophilic than the precursors from which they were derived. However, the systems to which Applicant alludes are those where the only hydrophilic

groups are those that are hydrolyzable and, thus, as "crosslinking" proceeds, thereby forming siloxane bonds Si-O-Si between individual organosilicon precursors, the hydrophilic substituents are consumed leaving only hydrophobic groups appended to the central silicon atom.

Take for example the template driven formation of porous materials derived from methyltrimethoxysilane:



As can be seen, as hydrolysis/condensation progresses, the hydrophilic, and hydrolyzable, methoxy groups are hydrolyzed thereby providing one equivalent of methanol and resulting in the formation of a Si-O-Si residue. With each subsequent hydrolysis/condensation, the content of hydrophobic methyl groups rises relative to the content of hydrophilic methoxy groups, which is decreasing. It is this occurrence to which Applicant refers that results in the loss of hydrophilic character. However, where each silane molecule contains one each of a non-hydrolyzable hydrophilic group (mercaptoalkyl or aminoalkyl) and one hydrophobic group (methyl), as is the case with the silanes mentioned in the Examiner's rejection, the presence of both hydrophilic- and hydrophobic groups is maintained throughout the crosslinking process. Compounds having both hydrophobic and hydrophilic character at the same time are labeled amphiphilic thus it can be said that the products described by *Pinnavaia* are inherently amphiphilic.

Allowable Subject Matter

Claims 13 and 14 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Applicant employs a different synthetic approach to prepare the stated apparatus where different silanes, one of which bears a non-hydrolyzable hydrophobic group and the other a non-hydrolyzable hydrophilic group are polycondensed. It is easy to control the ratio of hydrophobic to hydrophilic groups and, therefore, the wettability, by judicious selection of the relative amounts of hydrophobic group-containing silane and hydrophilic group-containing silane. The art cited herein uses a different strategy to prepare a similar apparatus having amphiphilic character and micro-structures but it is not at all clear that Pinnavaia's product is non-wettable.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marc S. Zimmer whose telephone number is 571-272-1096. The examiner can normally be reached on Monday-Friday 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy Gulakowski can be reached on 571-272-1302. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

September 7, 2005

Marc Zimmer
AU 1712